PATENT CLAIMS

- 1 1. An end piece for magnetic coupling of core parts to a closed path for magnetic flux, the
- 2 end piece comprising:
- a magnetic path part comprising a plurality of substantially adjacent, wire-shaped bodies,
- 4 each wire shaped body comprising end surfaces; and
- at least an abutment surface for abutment of the magnetic path part against the core parts,
- 6 wherein the abutment surface comprises the end surfaces of the wire-shaped bodies.
- 1 2. The end piece according to claim 1, wherein the wire-shaped bodies are made of a
- 2 magnetizable material.
- 1 3. The end piece according to claim 2, wherein the magnetizable material is iron.
- 1 4. The end piece according to claim 1, wherein the magnetic path part is hollow.
- 1 5. The end piece according to claim 4, wherein the wire bodies form arcs between an inner
- 2 annular abutment surface and an outer annular abutment surface.
- 1 6. The end piece according to claim 4, wherein the wire bodies form arcs between two
- 2 annular surfaces arranged beside each other.
- 1 7. The end piece according to claim 5, wherein the inner annular surface has the same area
- 2 as the outer annular surface.
- 1 8. The end piece according to claim 6, wherein the annular surfaces are cylindrical and have
- 2 a uniform thickness.
- 1 9. A composite core for a magnetic device, the composite core comprising:
- at least one core part; and
- at least one end piece for magnetic coupling of the at least one core part to a closed path
- 4 for magnetic flux, the end piece comprising wire shaped magnetic bodies, the wire shaped
- magnetic bodies comprising end surfaces,
- 6 wherein the end piece comprises at least an abutment surface for abutment against the

- 7 core part and a magnetic path part,
- wherein the magnetic path part comprises a plurality of substantially adjacent, wire-
- 9 shaped bodies, and
- wherein the abutment surface comprises the end surfaces of the wire-shaped bodies.
- 1 10. The composite core according to claim 9, wherein the core part comprises sheet magnetic
- 2 material.
- 1 11. The composite core according to claim 9, wherein the core part comprises sintered
- 2 material.
- 1 12. The composite core according to claim 9, further comprising two adjacent cylindrical
- 2 core parts and two end pieces.
- 1 13. The composite core according to claim 9, further comprising two concentric cylindrical
- 2 core parts.
- 1 14. The composite core according to claim 9, further comprising two adjacent parts each
- 2 having a rectangular cross-section.
- 1 15. A method of manufacturing an end piece for magnetic coupling of core parts to a closed
- 2 magnetic path for magnetic flux, the end piece comprising, a magnetic path part comprising a
- 3 plurality of substantially adjacent wire-shaped bodies, and at least an abutment surface for
- 4 abutment of the magnetic path part against the core parts, wherein each wire-shaped body
- 5 comprises an end surface, and wherein the abutment surface comprises end surfaces of the wire-
- 6 shaped bodies, the method comprising the steps of:
- winding a wire of magnetic material around a mold in order to form the magnetic path
- 8 part;
- dividing the wire winding in two in order to form abutment surfaces;
- removing the mold from the wire winding; and
- treating the abutment surfaces in order to provide a smooth surface,
- wherein abutment surfaces of the end piece have a shape which corresponds to a shape of
- an abutment surface of the core parts.

1	16. The method according to claim 15, wherein the core parts comprise a first tube and a
2	second tube, wherein the tubes are concentrically arranged and wherein the mold is a toroid, the
3	method further comprising the steps of:
4	winding the wire around the toroid in an annular direction relative to a linear axis located
5	at a center of the toroid, and
6	dividing the wire winding in a plane comprising the largest diameter of the toroid to form
7	a first abutment surface and a second abutment surface,
8	wherein the first abutment surface forms an outer ring for abutment against the first tube,
9	and
10	wherein the second abutment surface forms an inner ring for abutment against the second
11	tube.
1	17. The method according to claim 15, wherein the core parts are two tubes placed in parallel
2	beside each other, wherein the two tubes are at a distance from each other, and wherein the mold
3	is a toroid, further comprising the steps of:
4	winding the wire around the toroid in an annular direction relative to a linear axis located
5	at a center of the toroid; and
6	dividing the wire winding in a plane perpendicular to the annular direction to form
7	abutment surfaces,
8	wherein the abutment surfaces comprise two rings for abutment against the core parts.
1	18. The method according to claim 17, wherein the mold comprises an inner toroid and an
2	outer toroid, further comprising the steps of:
3	centering the inner toroid within a tube formed by the outer toroid;
4	locating an opening along an outer diameter of the outer toroid;
5	inserting the wire into the tube through the opening; and
6	winding the wire within the outer toroid,
7	wherein the mold comprises a gap where the wire winding can be intersected in a plane
8	perpendicular to the annular direction, and
9	wherein the abutment surfaces comprise two rings for abutment against the core parts.

- 1 19. The method according to claim 15, wherein the core parts are a number of tubes located
- beside one another in a circle, wherein the tubes are located at a distance from one another, and
- wherein the mold comprises a hollow outer toroid, further comprising the steps of:
- dividing the outer toroid along a path comprising a fixed radius from a linear axis located
- 5 at a center of the toroid;
- 6 locating an inner toroid inside the outer toroid;
- winding the wire within the outer toroid in an annular direction relative to the linear axis;
- 8 and
- 9 dividing the wire winding in a plane perpendicular to the annular direction;
- wherein the path comprises a cylindrical plane perpendicular to a radial direction where
- the toroid has a largest diameter, and
- wherein the abutment surfaces comprise two half rings for abutment against the core
- 13 parts.
- 1 20. The method according to claim 15, wherein the mold has a cross-section with a shape
- 2 selected from the group consisting of circular, oval, triangular, parallelogrammatic, and
- 3 polygonal shaped cross-sections.
- 1 21. A method of manufacturing a composite core for a magnetic device according to one of
- 2 claims 15-20, the method comprising the steps of:
- manufacturing at least one core part by rolling and cutting sheet material;
- manufacturing at least one end piece by the method according to any one of claims 15-20;
- 5 and
- joining the at least one core part to the at least one end piece by taping the core part to the
- 7 end piece.
- 1 22. The method of claim 21, wherein the step of manufacturing at least one core part
- 2 comprises:
- manufacturing the core part by sintering powdered material.
- 1 23. The method of claim 21 wherein the core part and the end pieces are taped together with a
- 2 tape that is selected from a group consisting of seize tape, glass fiber tape, and cotton tape.

- 1 24. The method of claim 21, wherein the step of joining the core part to the end piece
- 2 comprises gluing the core part and the end piece together.